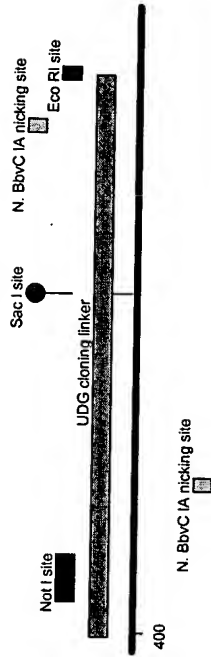


FIGURE 1

pKOS293-88-1\_Synthon\_vector



a)

Not I      Nhe I      Not I      N. BbvC IA      Sac I      N. BbvC IA      Eco RI  
 5' AGCTAGCGGCGGCCCTCAGCTATATCGCTATCGATGAGCTCAATGCATCGATCACTAGCTGAGGGAATT 3'  
 3' TCGATCGCGGCGGGAGTCGATATAGCGATAGCTACTCGAGTTACGTAGCTAGTGCAGCTCCCTTAA 5'

Digest with Sac I



5' AGCGGCGCGGCCCTCAGCTATATCGCTATCGATGAGCT 3'      5' CAATGCATCGATCACTAGCTGAGGG 3'  
 3' TCGCGGCGCGGGAGTCGATATAGCGATAGCTAC 5'      3' TCGAGTTACGTAGCTAGTGCAGCTCCC 5'

Digest with nicking endonuclease N. BbvC IA

Treat with Exonuclease III



5' AGCGGCGCGGCCCTCAGCTATATCGCTATCGATGAGCT 3'      5' TGAGGG 3'  
 3' TCGCGGCGCGGGAGT 5'      3' TCGAGTTACGTAGCTAGTGCAGCTCCC 5'

b)



FIGURE 3

FIGURE 3A

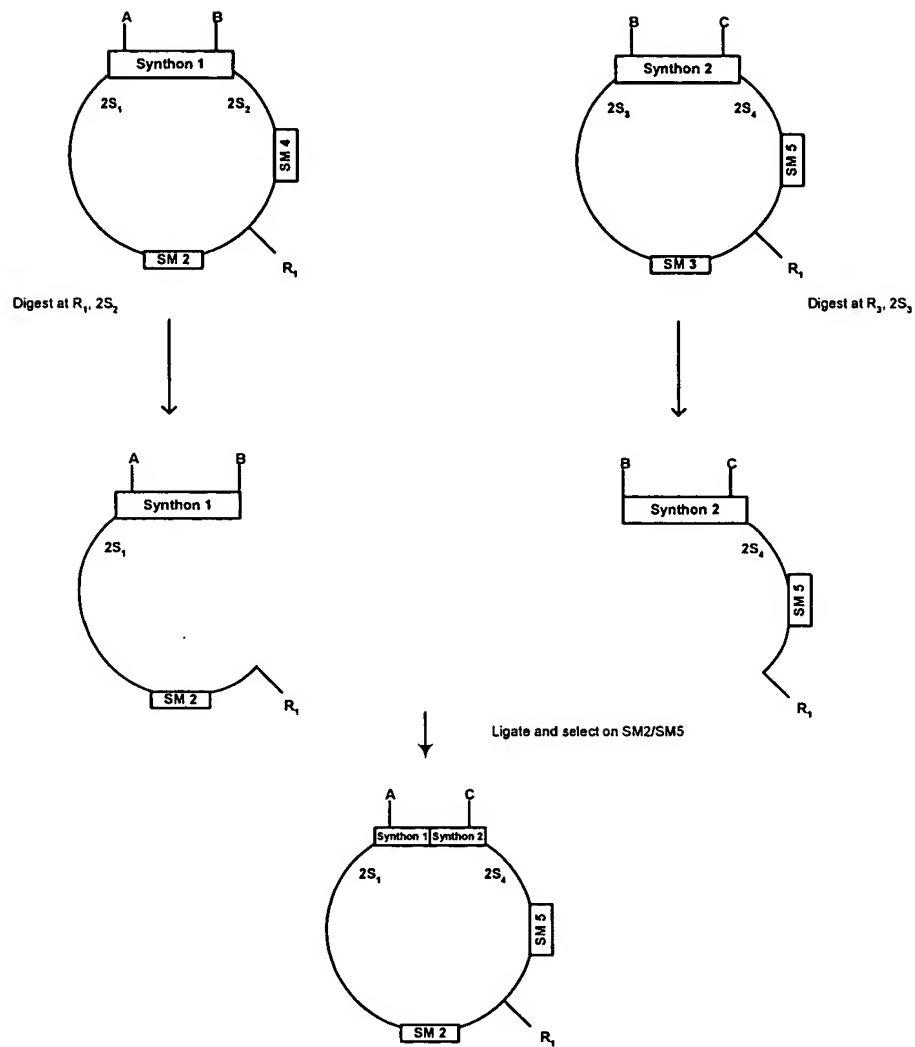


FIGURE 3B

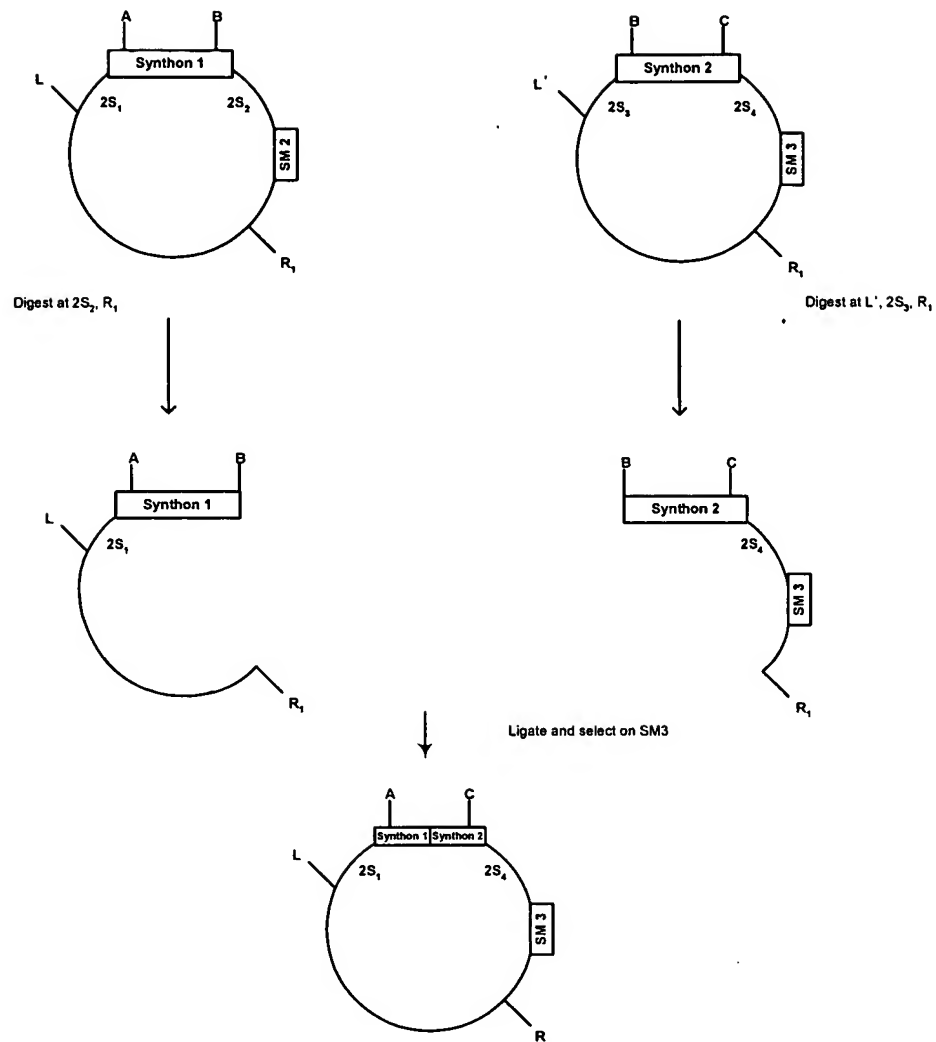
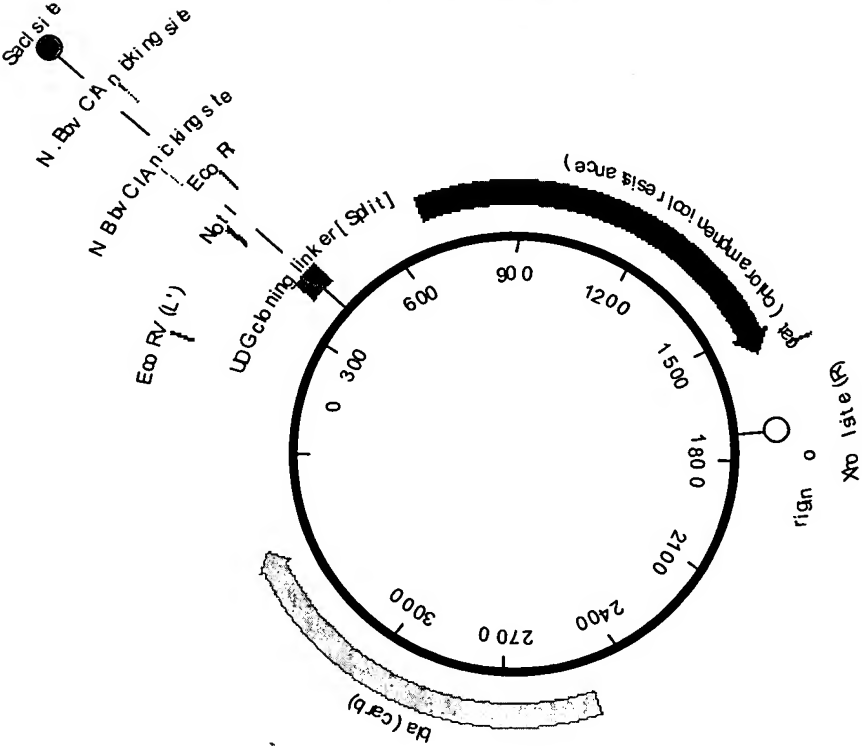


FIGURE 4

A4. Vector pKos293-172-2



4B. Vector pKos293-172-A76

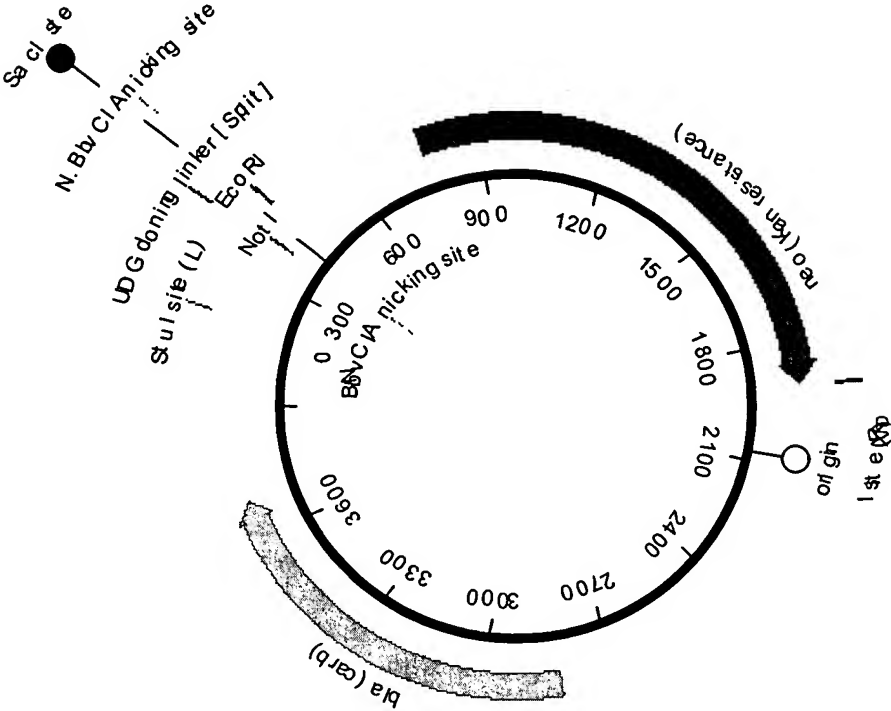


FIGURE 5

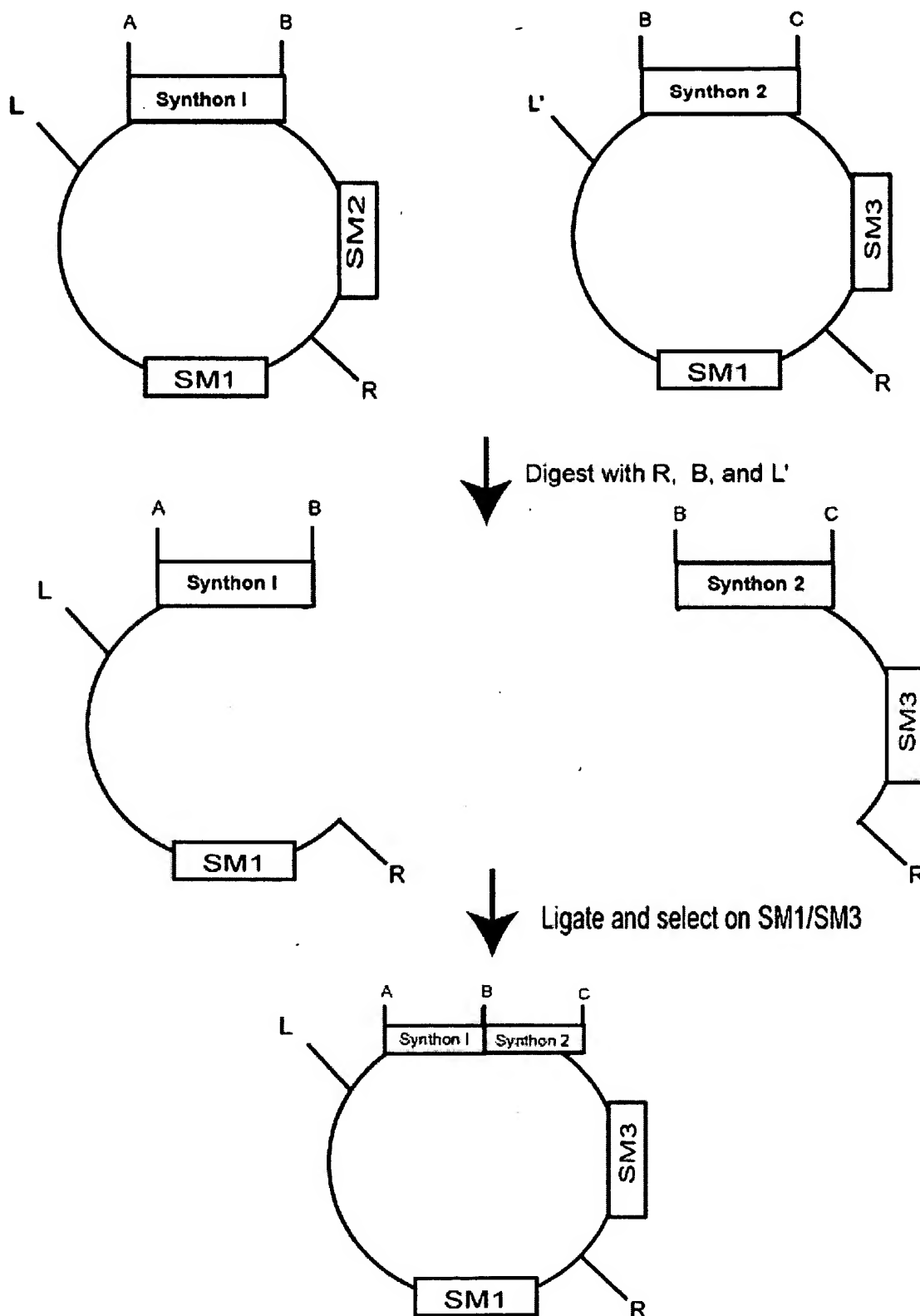
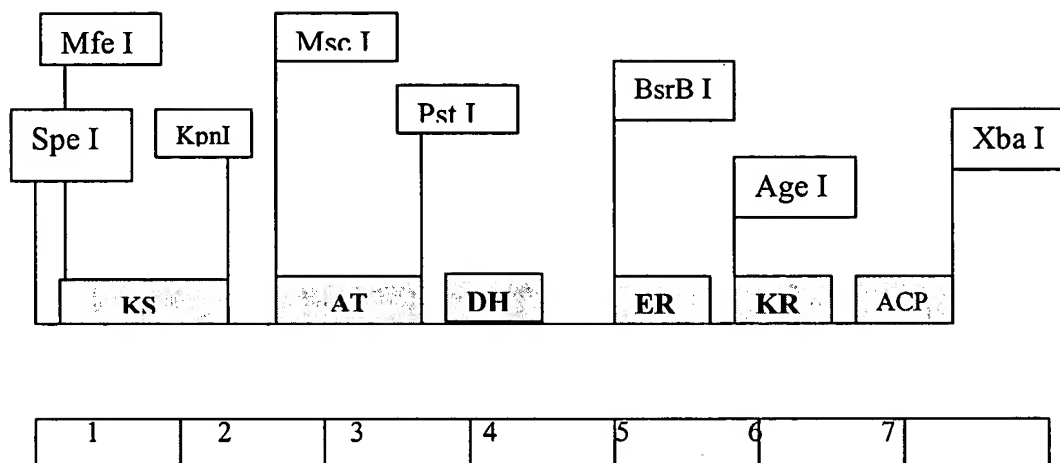


FIGURE 6



6B.

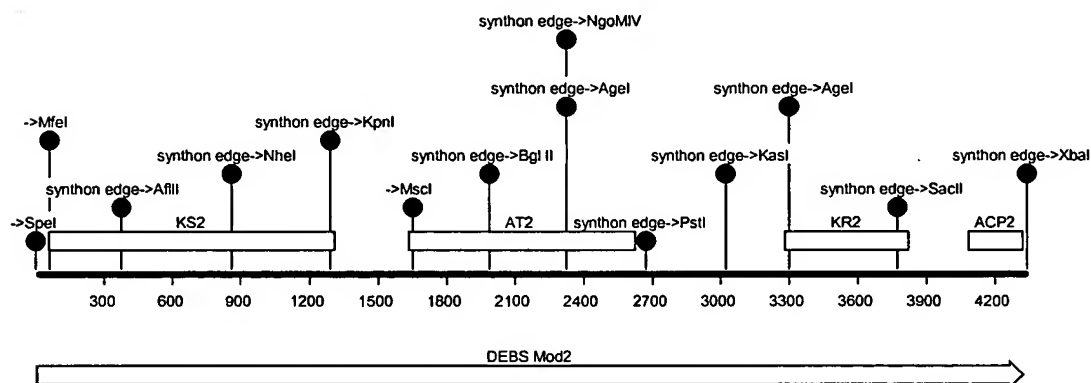
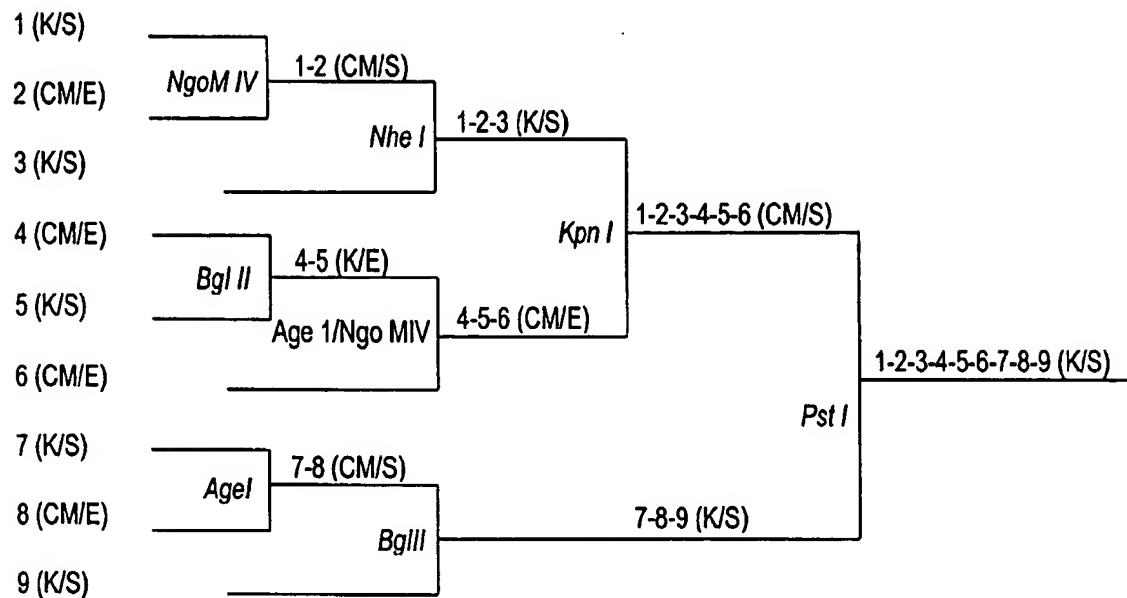


FIGURE 7

Stitching and Selection Strategy





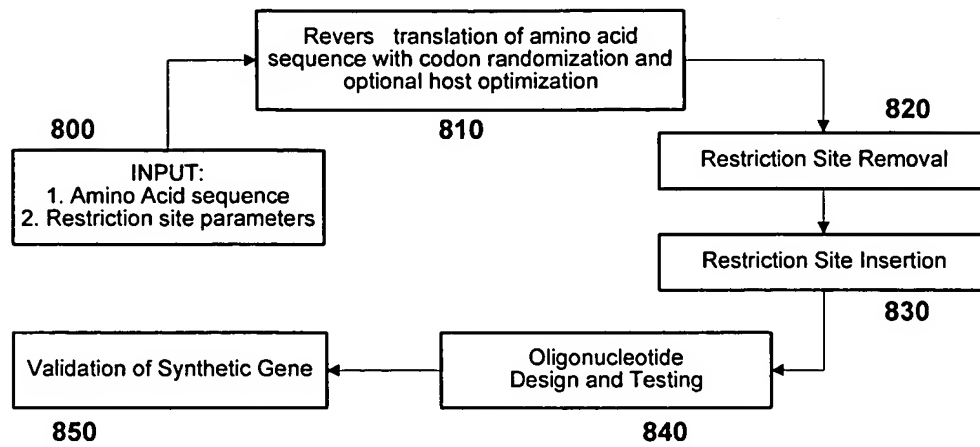


FIGURE 8

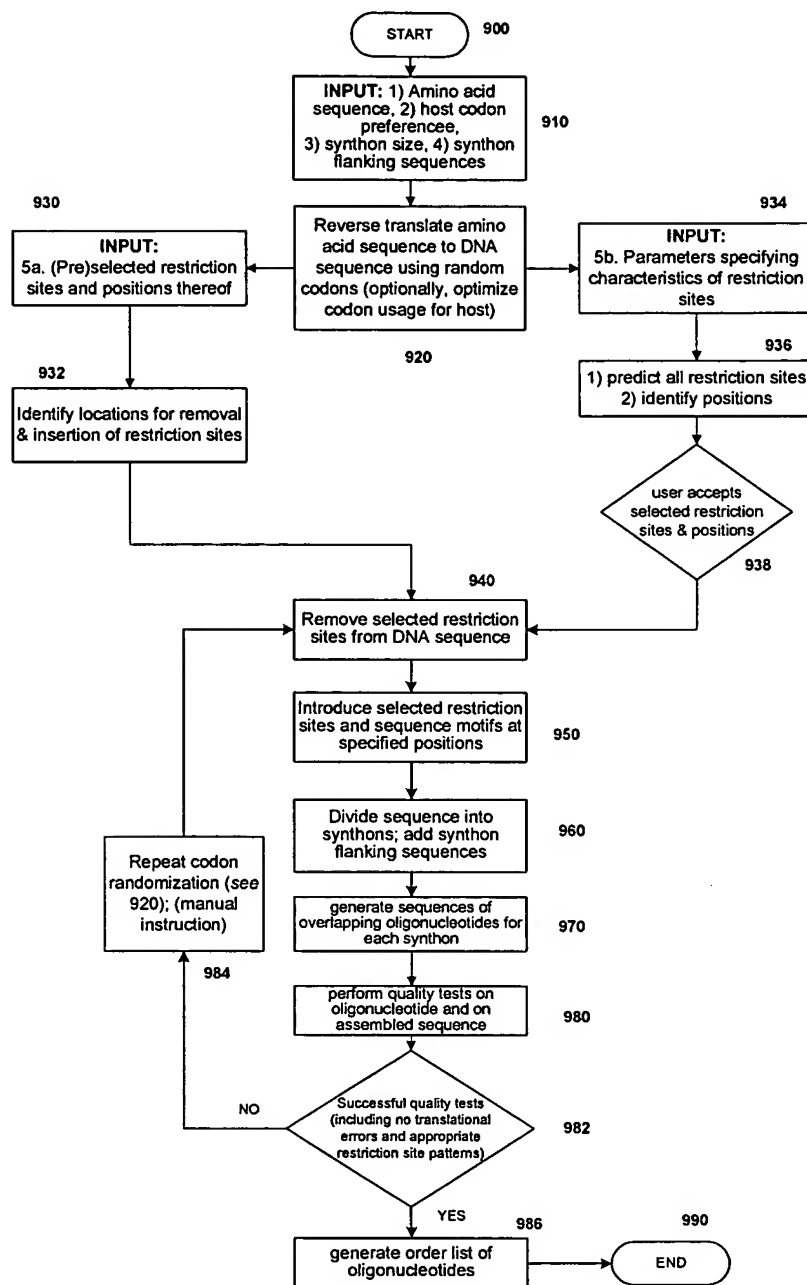


FIGURE 9. GeMS algorithm chart

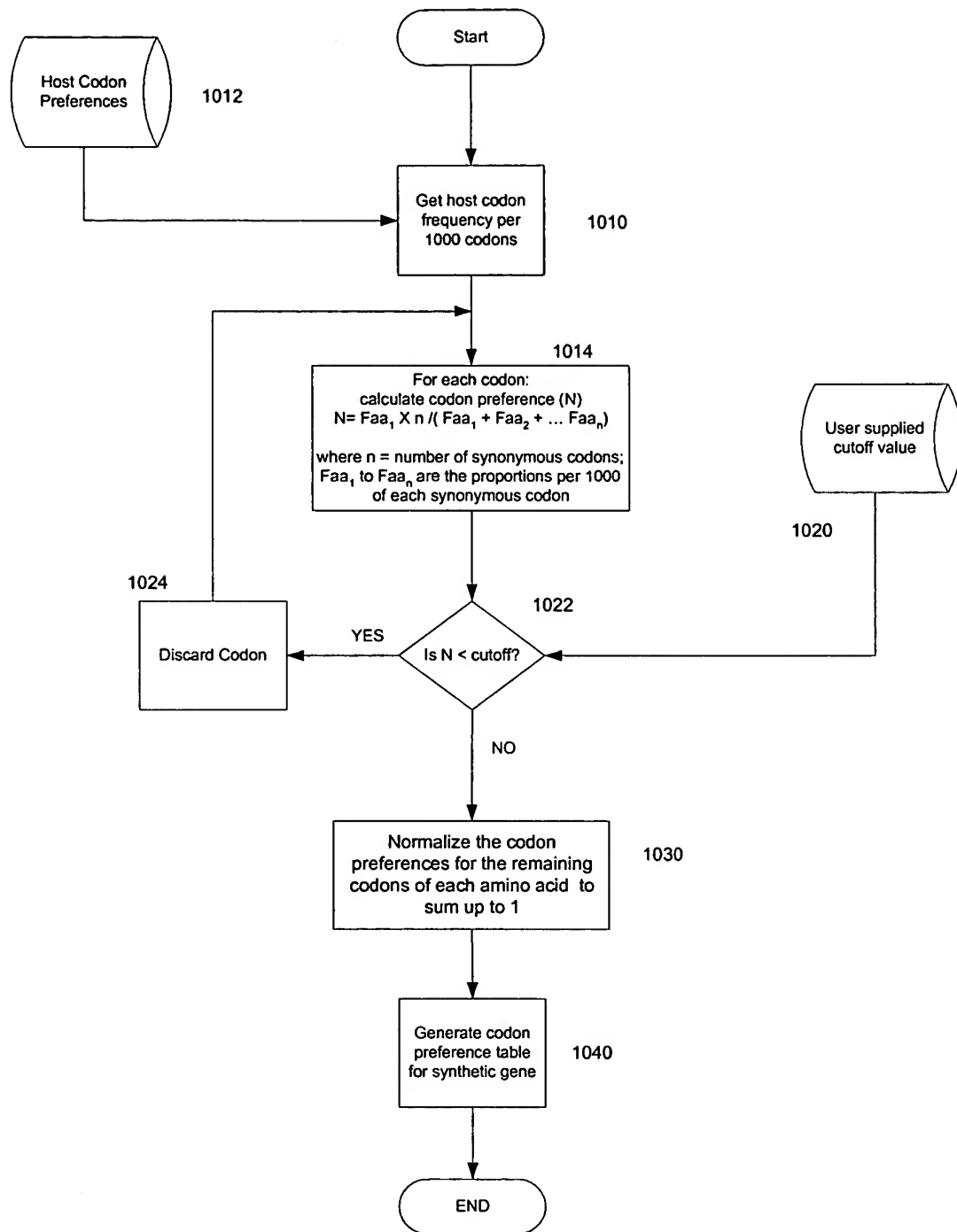


FIGURE 10A. Codon optimization

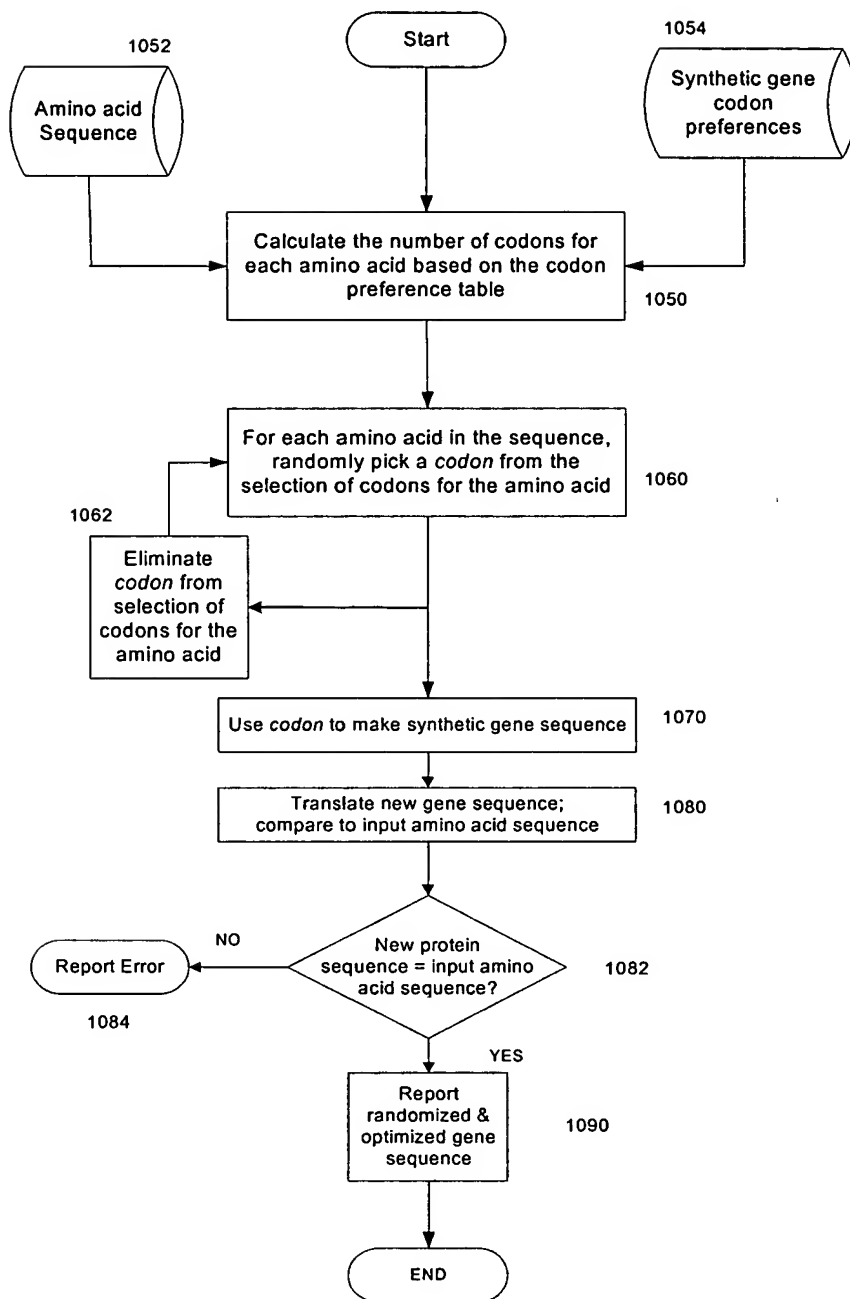


FIGURE 10B. Generation of randomized & optimized gene sequence

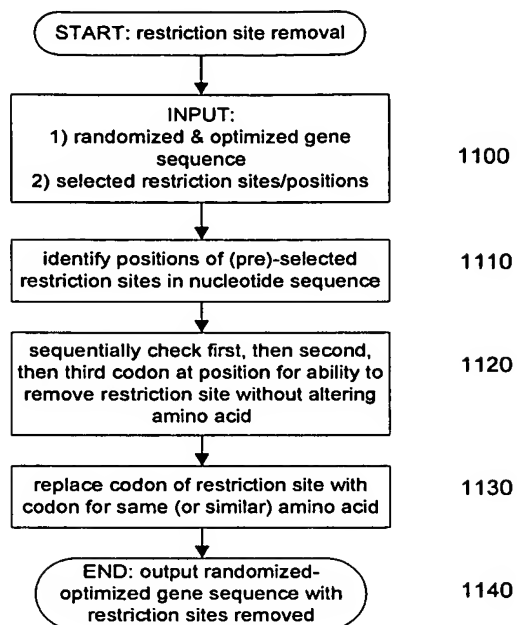


FIGURE 11. Restriction site removal

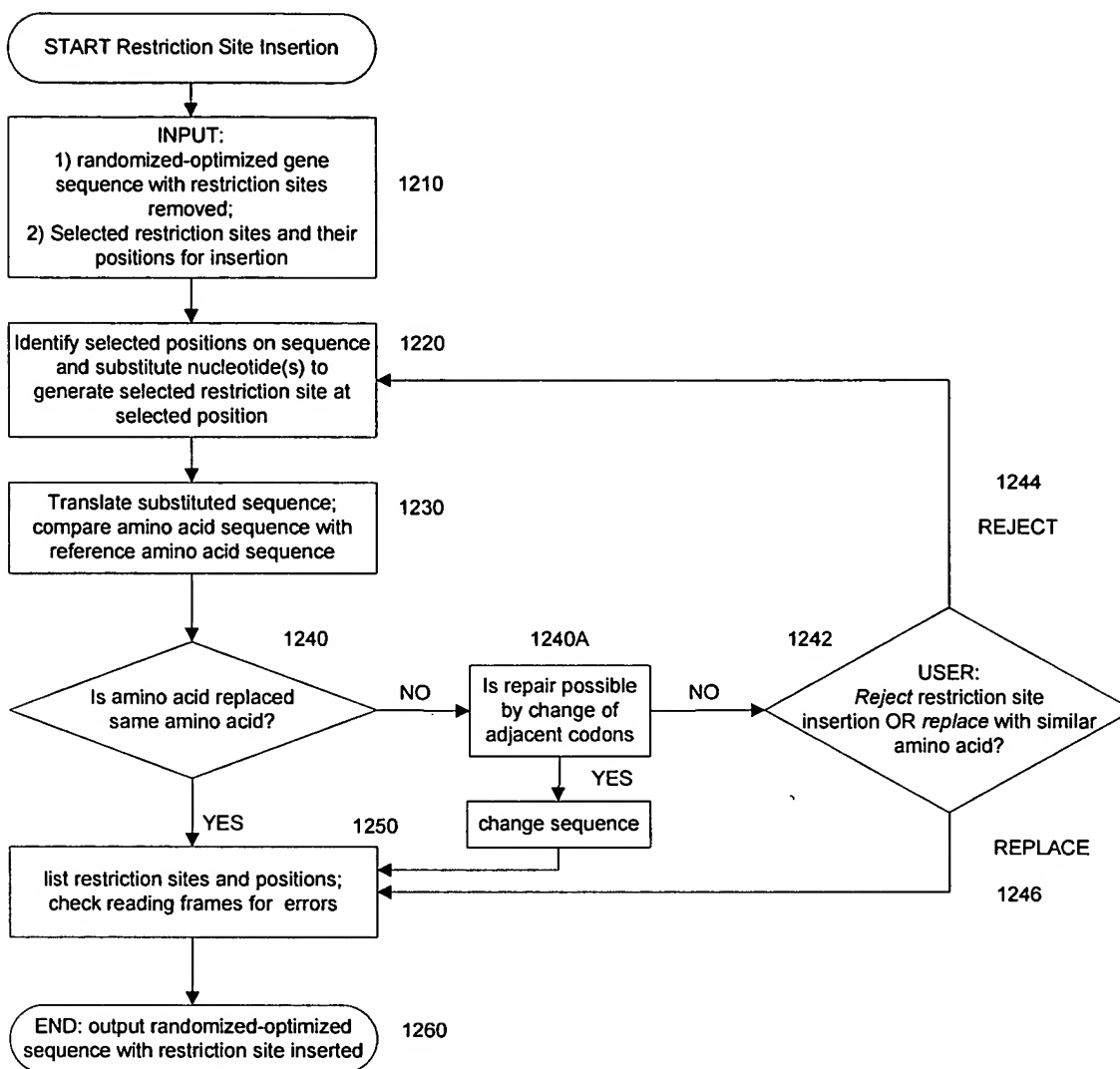


FIGURE 12. Restriction Site insertion

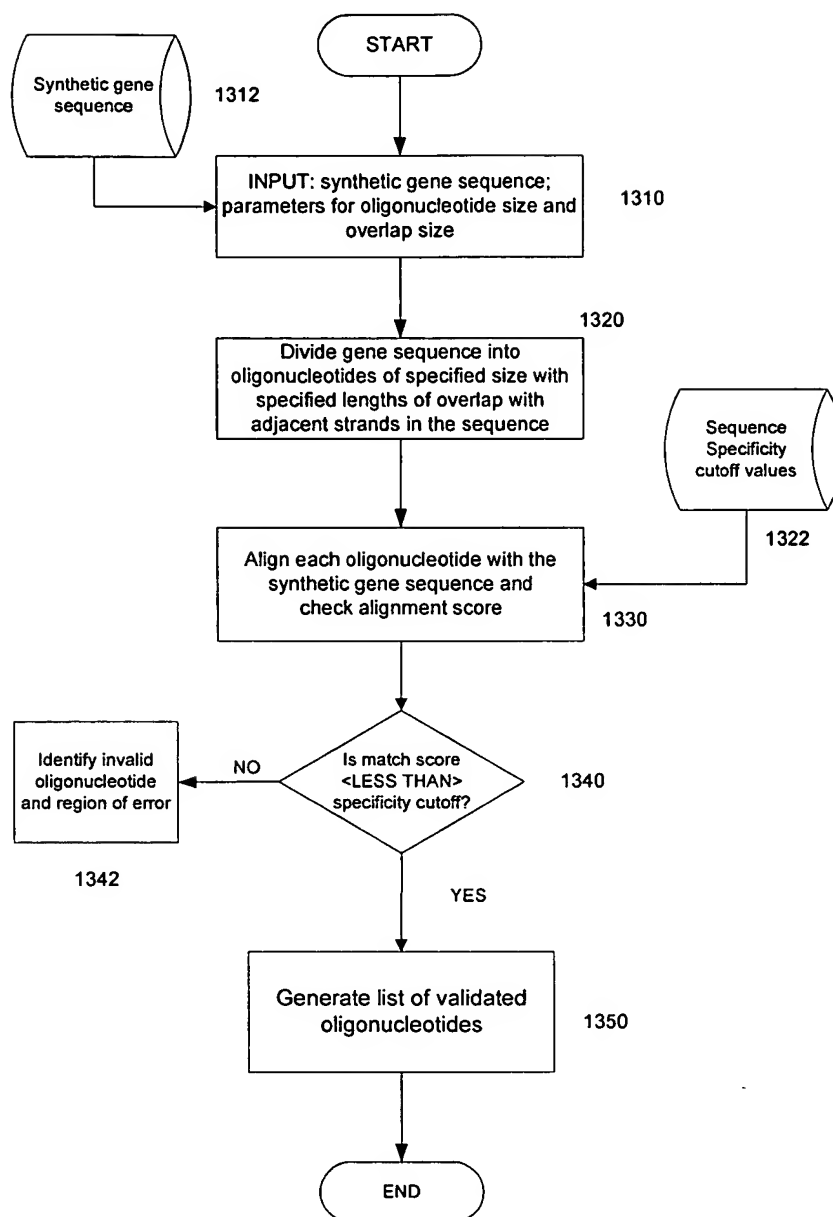


FIGURE 13. Generation of oligonucleotides for synthetic gene.

FIGURE 14

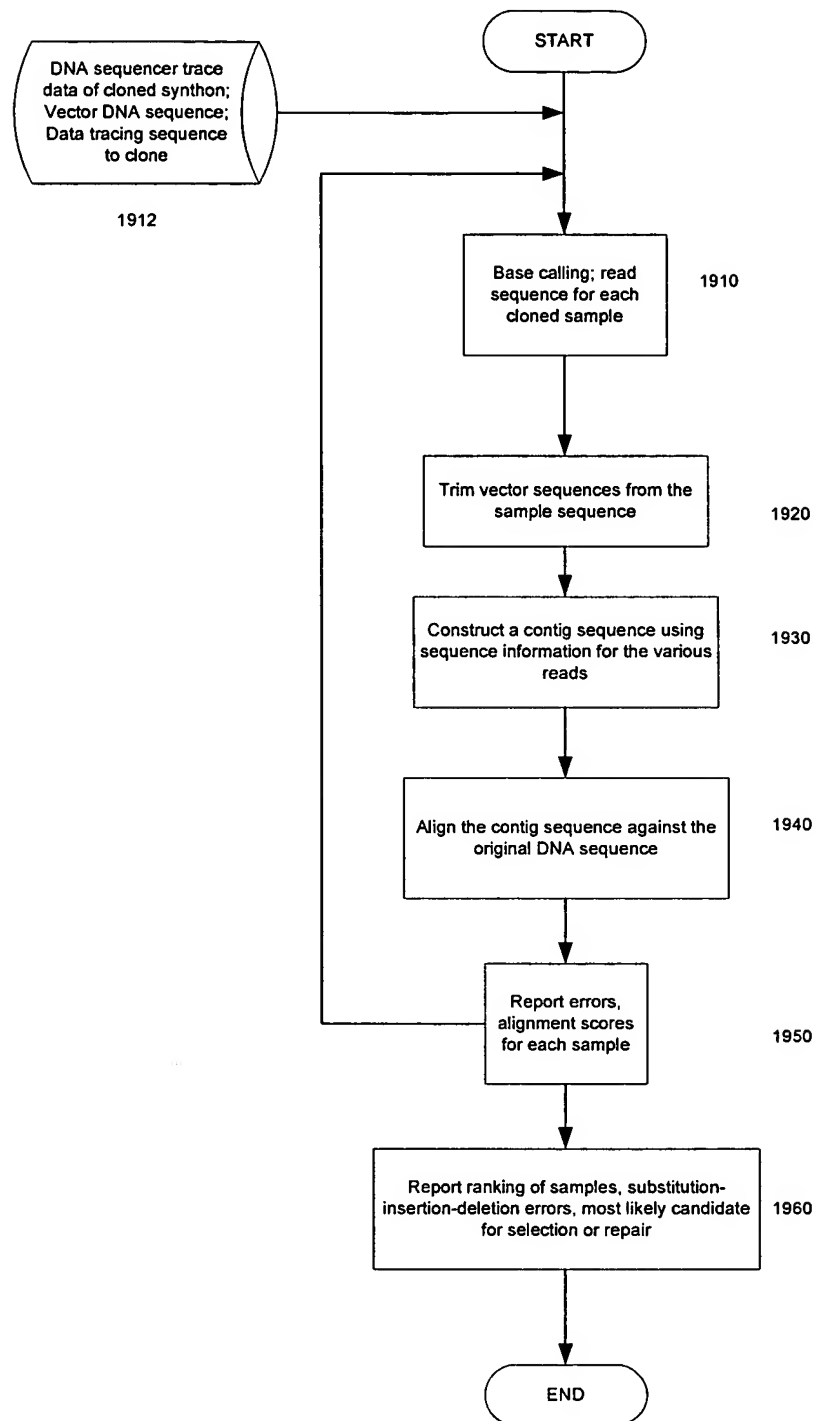




FIGURE 15

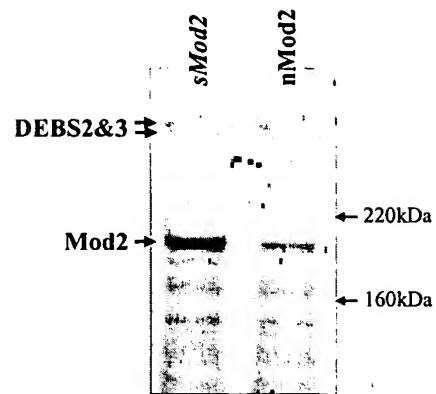
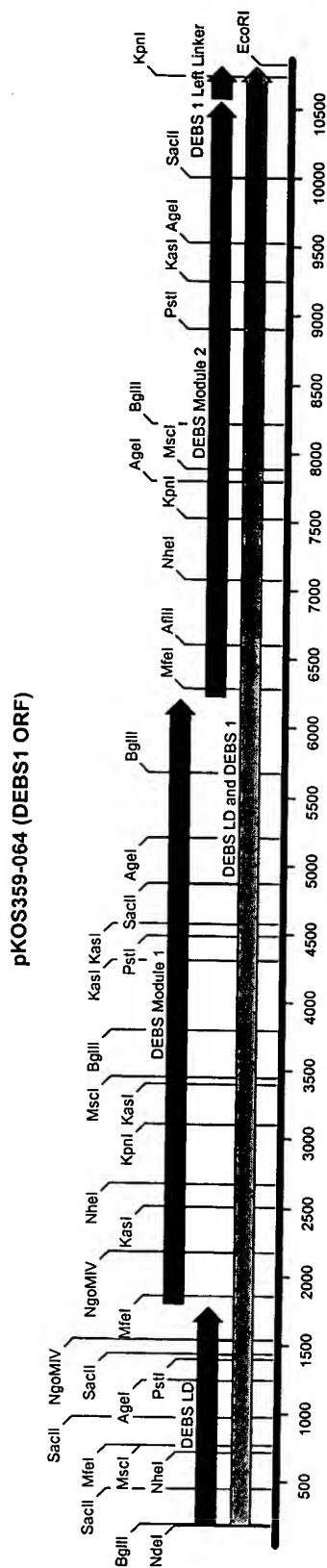


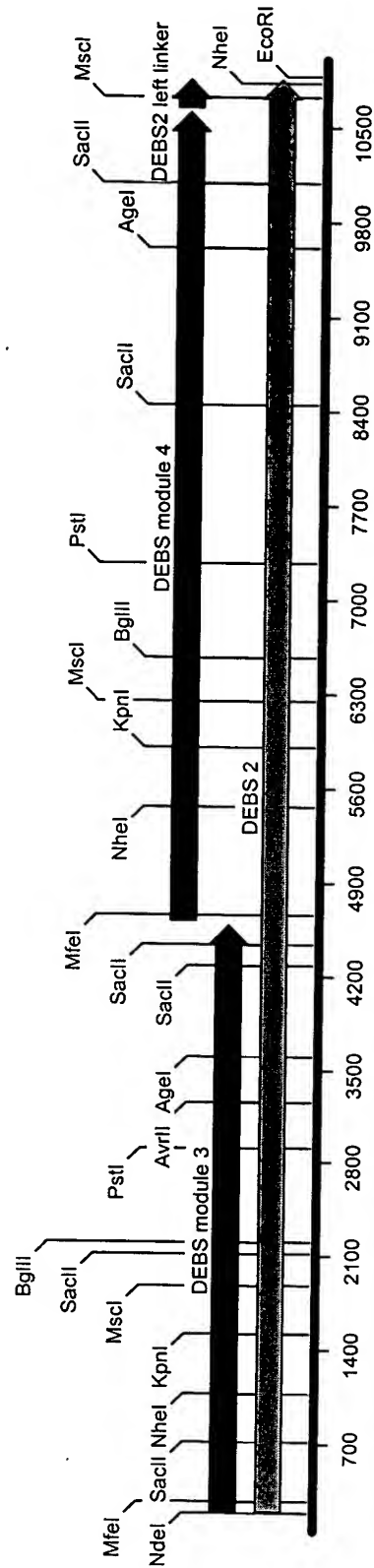
FIGURE 16

16A



**pKOS359-059 (DEBS2 ORF)**

16B



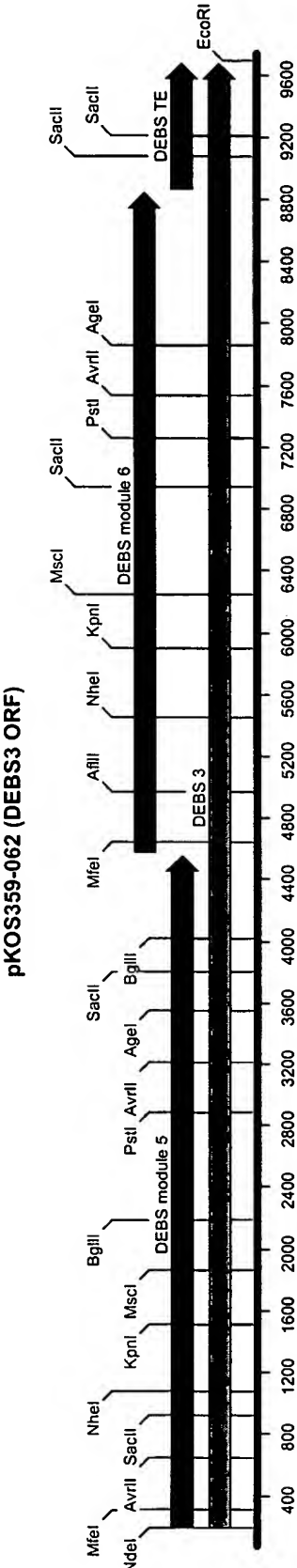


FIGURE 17

FIGURE 17 A

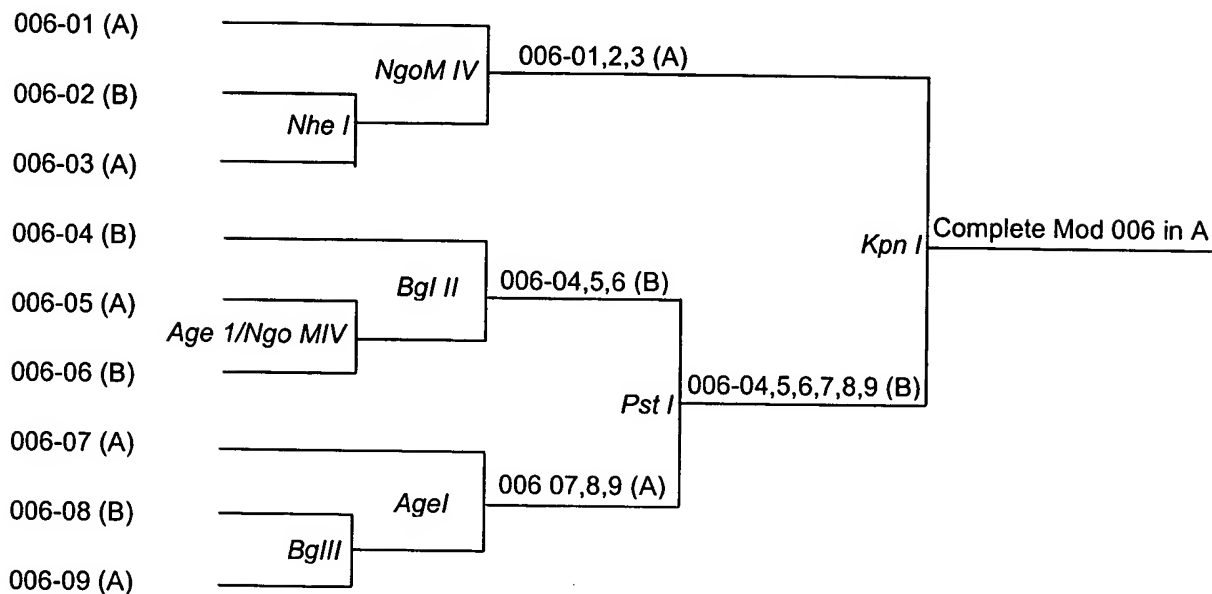


FIGURE 17 B

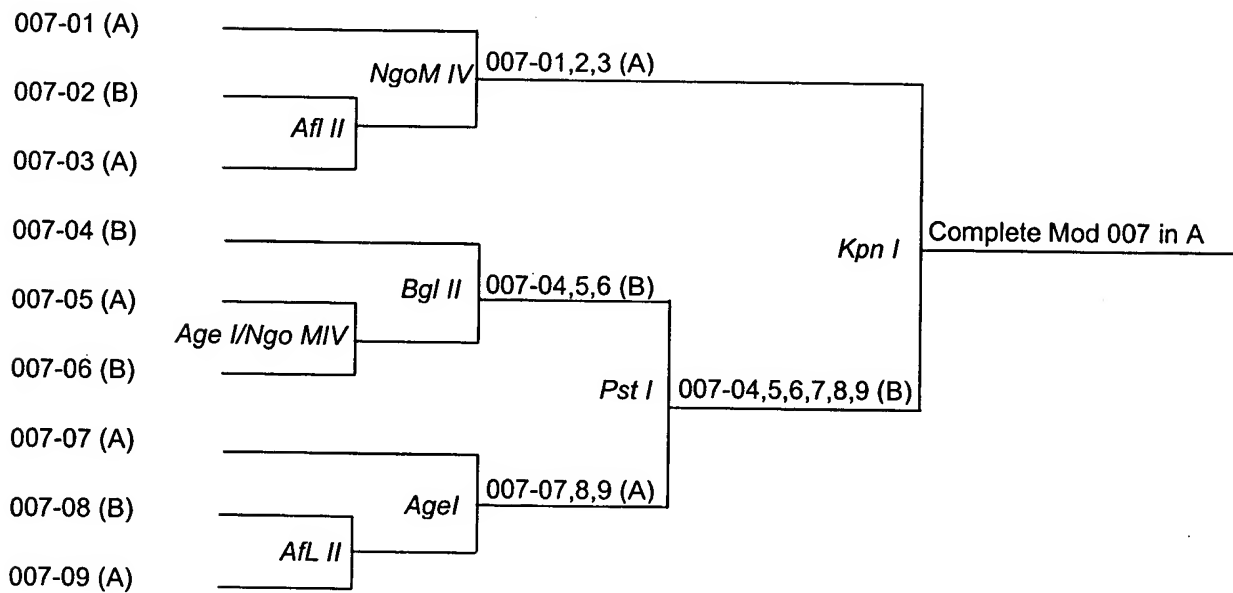


FIGURE 17 C

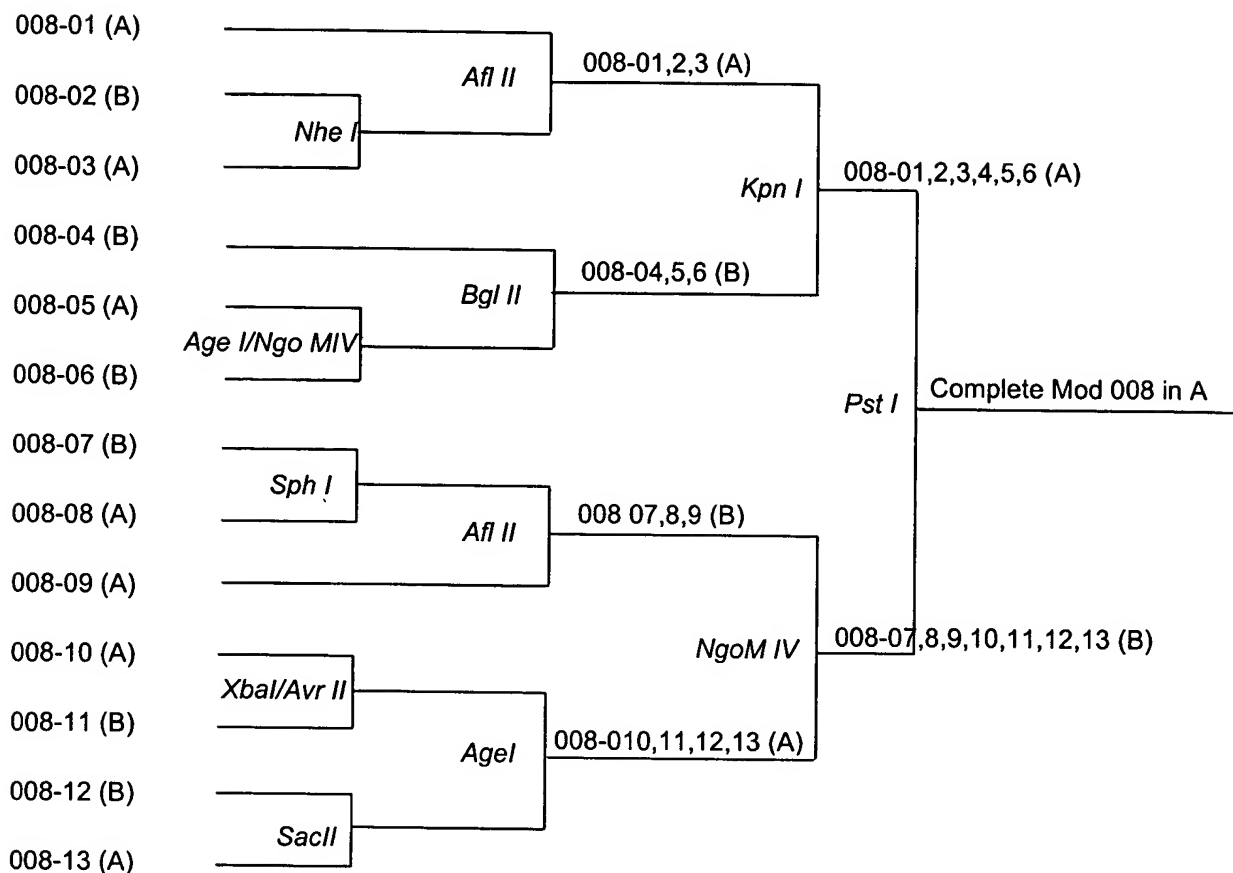


FIGURE 17 D

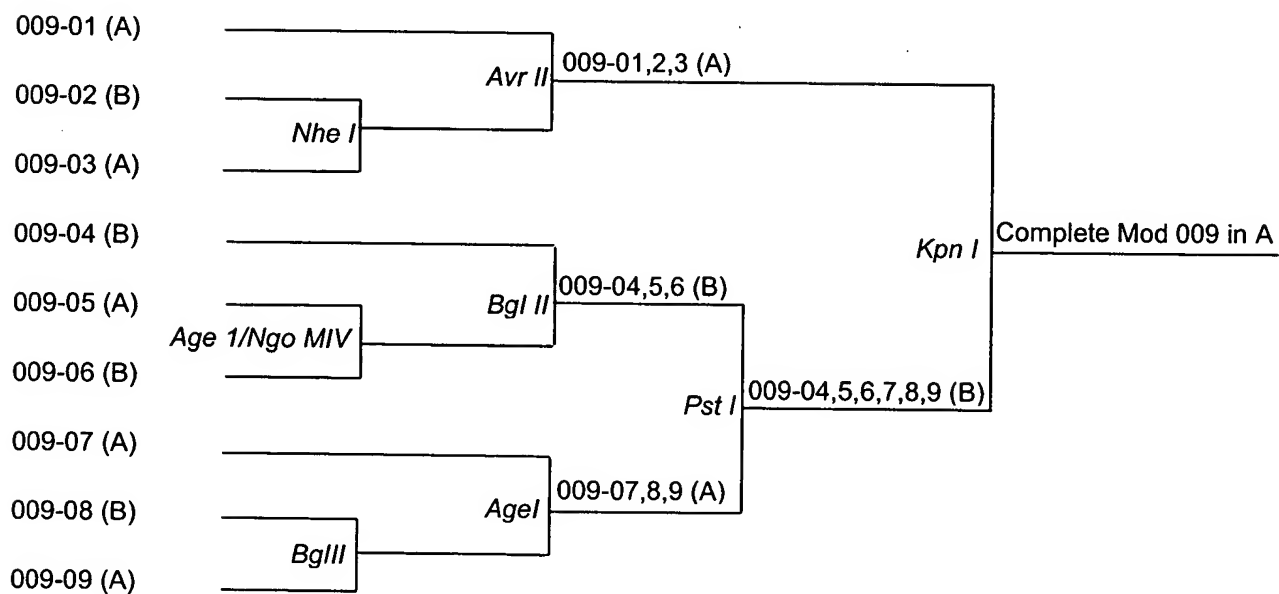


FIGURE 17 E

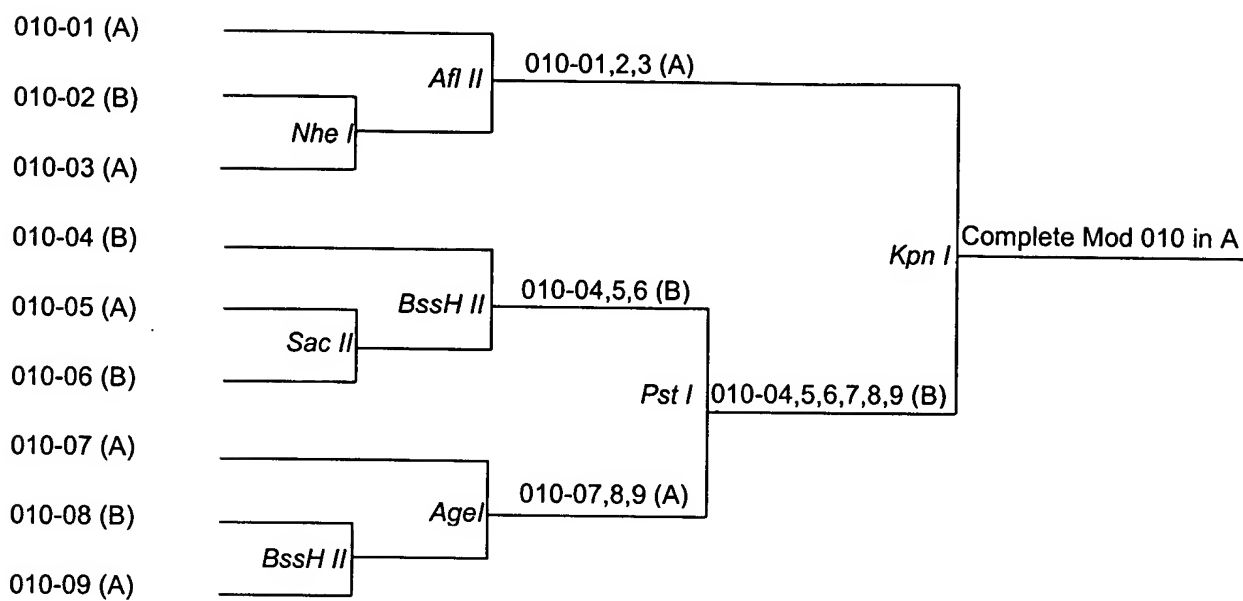
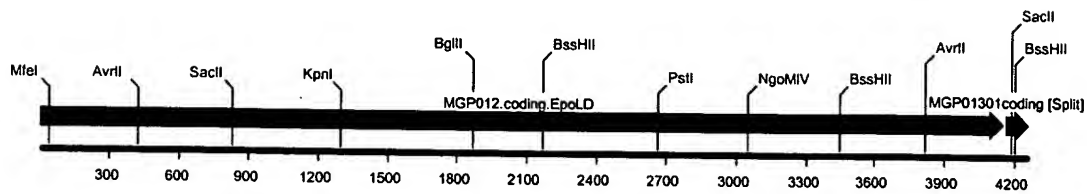
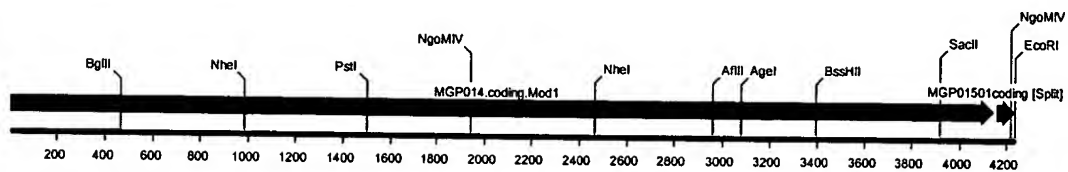


FIGURE 18

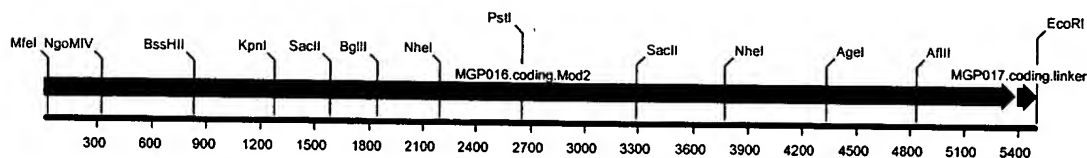
EpoA\_MGP.final.dna



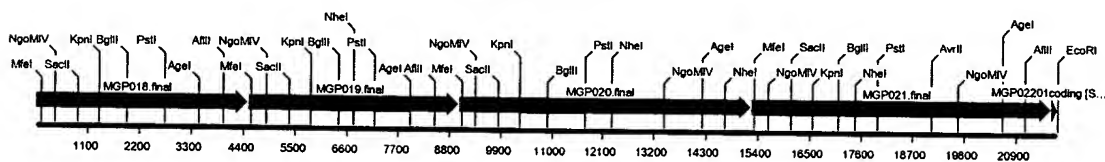
EpoB\_MGP.final.dna



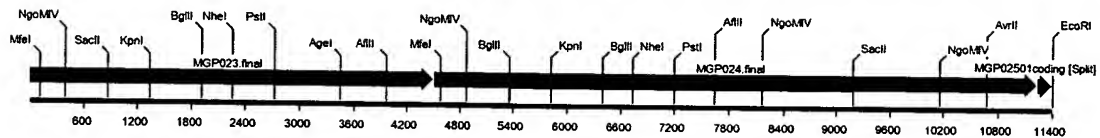
EpoC\_MGP.final.dna



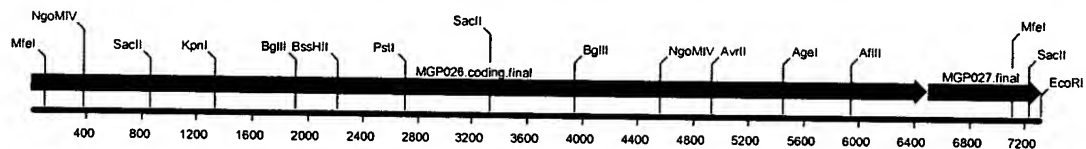
EpoD\_MGP.final.dna



EpoE\_MGP.final.dna



EpoF\_MGP.final.dna



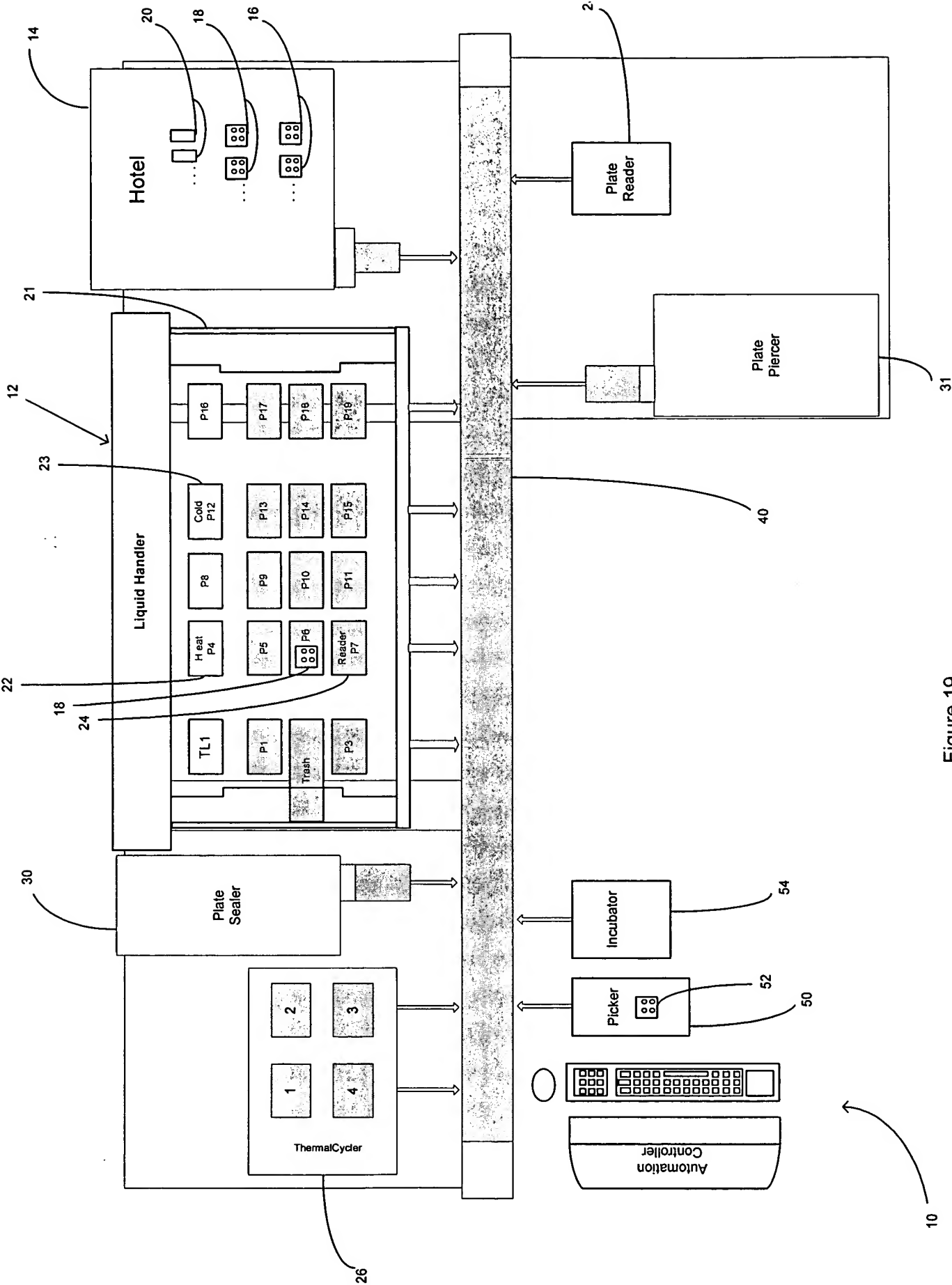


Figure 19